State of Washington - Department of Corrections

Sustainability Progress Report

Year 1: July 1, 2003-June 30, 2004

October 15, 2004

WASHINGTON STATE DEPARTMENT OF CORRECTIONS
SUSTAINABILITY PROGRESS REPORT

October 15, 2004

The Department of Corrections is committed to becoming a sustainable agency.

As a steward of public resources, the Department of Corrections is committed to work for sustainable, safe communities. The Department will systematically evaluate the simultaneous long-term impacts of its construction and operations decisions on the environment, community, and economy of the state.

The Department will:

Reduce its dependence on non-renewable energy sources,
Reduce potable water use,
Reduce the use of toxic materials,
Increase the sustainability of its facilities, and
Reduce waste.

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Executive Summary

In response to Executive Order 02-03, signed by Governor Gary Locke on September 18, 2002, the Department of Corrections embarked on a journey to become a sustainable agency. The Department developed a sustainability plan, issued September 1, 2003, which defines five major goals.

The Department will:
1. Reduce its dependence on non-renewable energy sources.
2. Reduce potable water use.
3. Reduce the use of toxic materials.
4. Increase the sustainability of its facilities.
5. Reduce waste.

For each of these goals, interim milestones were defined in the plan for 1, 5, 10, 25, and 50 years. Specific actions and approaches were proposed for achieving these milestones. Performance measures, called "yardsticks" in the plan, were also defined for tracking progress toward these goals.

This first annual progress report documents the Department's progress in reaching the goals defined in the Sustainability Plan, for the period from July 1, 2003 to June 30, 2004. Most of the Year 1 milestones involved collecting data to establish baselines. We recognized that we could not measure progress if we did not know where the Department stood at the present moment in terms of energy consumption, water use, toxic material use, sustainable facilities, and waste generation.

Even though baselines were not yet established, we went forward with a number of sustainability initiatives. Probably the two most significant of these initiatives were training staff at all levels and establishing local sustainability teams within each of the Department's 15 institutions.

This came from a fundamental understanding that sustainability will be achieved by all of us working together to change how we do business.

Highlighted in this report are a number of specific projects we have launched that represent steps toward achieving our sustainability goals. These projects include two operating compost facilities and another in the design and permitting stage, water harvesting systems, reduction of toxic chemicals at several facilities, aggressive water conservation programs, reuse of treated wastewater, selection and use of environmentally friendly janitorial products, organic gardening and groundskeeping, green building design and construction, active recycling programs at several institutions, and others.

In addition, the Department is working with other state agencies and the Governor's Policy Office to coordinate and collaborate on statewide sustainability initiatives. These measures include statewide procurement, training on sustainability, information sharing, policy development, and other aspects of facilitating sustainable practices among state agencies.

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1.0 BACKGROUND

The Washington Department of Corrections currently houses, clothes, and feeds over 16,000 offenders statewide. The Department operates 15 prisons, 15 work release facilities, and over 70 community corrections offices (see Figure 1). The institutions resemble small cities, with water systems, sewer collection systems, wastewater treatment plants, large boilers, huge kitchens, warehouses, fleets of passenger and heavy vehicles, scores of maintenance personnel, administrative staff, and dozens to hundreds of correctional officers. Our operations offer many opportunities for implementing sustainability. With approximately 8,000 employees, Corrections is the second largest state agency.

Table 1 provides a summary of the institutions by name, abbreviation, location, and average number of offenders in fiscal 2004.

In addition to the facilities noted above, Corrections operates five regional offices and headquarters in Olympia. Sustainability initiatives have begun at these regional and headquarters offices, however, most of the data collection effort was focused on the institutions in this first year.

2.0 SUSTAINABILITY PLAN GOALS

The Department chose 50 years as its long-range horizon for accomplishing its primary sustainability goals. For the first of year of Sustainability Plan implementation, the Department focused its efforts primarily on the Year 1 milestones. These near-term and long-range milestones are summarized in Table 2.

Figure 1. Location of Department of Corrections Institutions

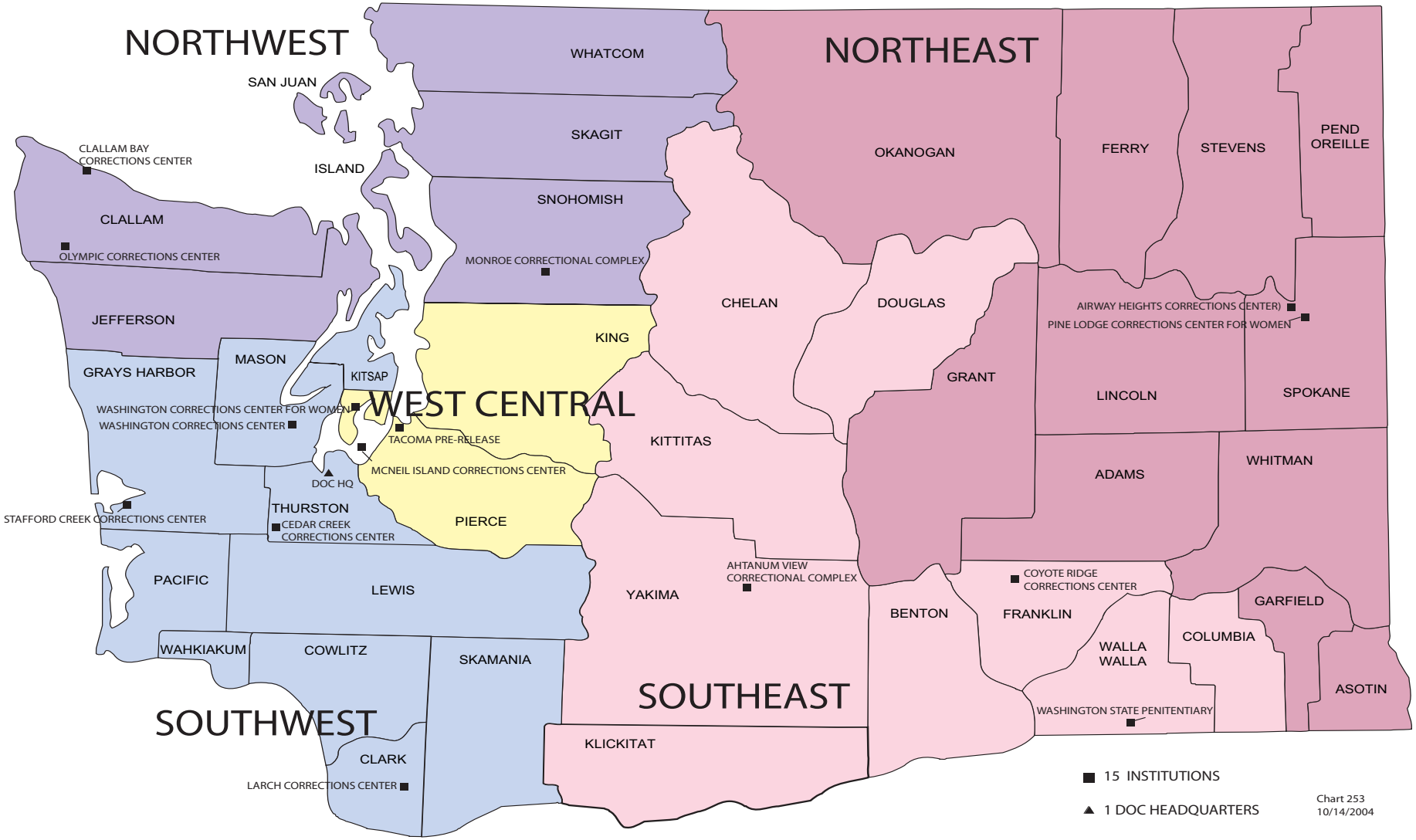


Table 1. Department of Corrections Institutions

Institution	Abbreviation	Location	Average Number of Offenders in Fiscal 2004
Airway Heights Corrections Center	AHCC	Near Spokane, Spokane County	2,073
Ahtanum View Corrections Center	AVCC	Yakima, Yakima County	168
Clallam Bay Corrections Center	CBCC	Clallam Bay, Clallam County	887
Cedar Creek Corrections Center	CCCC	Near Littlerock, Thurston County	396
Coyote Ridge Corrections Center	CRCC	Connell, Franklin County	588
Larch Corrections Center	LCC	Near Yacolt, Clark County	403
Monroe Correctional Complex	MCC	Monroe, Snohomish County	2,415
Olympic Corrections Center	OCC	Near Forks, Jefferson County	363
Pine Lodge Corrections Center for Women	PLCCW	Medical Lake, Spokane County	324
Stafford Creek Corrections Center	SCCC	Near Abdrdeen Grays Harbor County	1,913
Tacoma Pre-Release	TPR	Lakewoor, Pierce County	132
Washington Corrections Center	WCC	Near Shelton, Mason County	1,882
Washington Corrections Center for Women	WCCW	Gig Harbor, Pierce County	896
Washington State Penitentiary	WSP	Walla Walla, Walla Walla County	2,126
Average Number of Offenders Systemwide, Fiscal 2004			15,598

Table 2. Summary of Near-Term and Long-Range Sustainability Milestones

Sustainability Goal	Year 1 Milestones (2004)	Year 50 Milestones (2054)
1. Reduce our dependence on non-renewable energy sources	▪ Baseline for energy consumption is established ▪ Alternative (renewable) energy sources are identified	▪ 100% of our total energy need is provided from renewable sources
2. Reduce potable water use	▪ Baseline for water consumption is established	▪ Potable water usage is reduced by 75%
3. Reduce use of toxic materials	▪ Baseline for persistent bioaccumulative toxins (PBTs) and other toxic material use is established ▪ Baseline for herbicide and pesticide use is established ▪ Baseline for indoor air quality is established ▪ Baseline for organic food purchased or prepared in facility kitchens is established	▪ 100% of products purchased and produced are sustainable
4. Increase the sustainability of our facilities	▪ All new building design and construction beginning in 2003 meets LEED™ 2.1 Silver standard or equivalent	▪ All new construction and leased facilities meet or exceed LEED™ Platinum standard ▪ 50% of existing DOC buildings are built to LEED™ standards or have incorporated green building elements through renovation and remodeling
5. Reduce waste	▪ Baseline for solid waste generation is established ▪ Baseline for food waste disposal is established ▪ Baseline for paper use and recycled content is established ▪ Baseline for recycling paper, cans, bottles, and other materials is established	▪ Facilities reduce solid waste and food waste by 90%

LEED™ stands for Leadership in Energy and Environmental Design, and is a trademark of the U.S. Green Building Council.

3.0 YEAR 1 MILESTONE ACHIEVEMENTS

Most of the Year 1 milestones involved the establishment of baselines for measuring progress toward achieving our long-range goals. A sustainability team was formed at each of the institutions. The teams collected data for their own facilities and forwarded the data to the Sustainability Coordinator. These data are presented graphically in the following section.

Table 3 provides a quick overview of the Department's success in achieving the Year 1 milestones. Where a milestone involved establishment of a baseline, the corresponding figure or table is indicated. If the milestone involved another type of activity, the status of that activity is noted.

Table 3. Summary of Year 1 Milestone Achievements

Sustainability Goal	Year 1 Milestones (2004)	Milestone Achievement
1. Reduce our dependence on non-renewable energy sources	▪ Baseline for energy consumption is established	▪ Figure 2 – Historic Annual Energy Usage ▪ Figure 3 – Historic Daily Energy Usage per Offender ▪ Figure 4 – Historic Annual Energy Usage by Facility ▪ Figure 5 – Historic Annual Energy Usage per Offender ▪ Figure 6 -- Annual Diesel and Gasoline Usage ▪ Figure 7 -- Daily Diesel and Gasoline Usage per Offender
	▪ Alternative (renewable) energy sources are identified	▪ Complete for now. Ongoing activity as there is rapid change in this area.

Sustainability Goal	Year 1 Milestones (2004)	Milestone Achievement
2. Reduce potable water use	▪ Baseline for water consumption is established	▪ Figure 9 – Annual Potable Water Usage ▪ Figure 10 – Daily Potable Water Usage per Offender ▪ Figure 11 -- Annual Wastewater Discharge ▪ Figure 12 – Daily Wastewater Discharge per Offender
3. Reduce use of toxic materials	▪ Baseline for PBTs and other toxic material use is established	▪ Not able to quantify
	▪ Baseline for herbicide and pesticide use is established	▪ Not able to quantify
	▪ Baseline for indoor air quality is established	▪ Too expensive to conduct monitoring
	▪ Baseline for organic food purchased or prepared in facility kitchens is established	▪ Quantified total organic food produced
4. Increase the sustainability of our facilities	▪ All new building design and construction beginning in 2003 meets LEED™ 2.1 Silver standard or equivalent	▪ Internal policy established ▪ LEED™ buildings listed with square footage, Table 4
5. Reduce waste	▪ Baseline for solid waste generation is established	▪ Figure 14 – Annual Solid Waste Disposal ▪ Figure 15 – Daily Solid Waste Disposal per Offender ▪ Figure 16 – Hazardous Waste Generated

Sustainability Goal	Year 1 Milestones (2004)	Milestone Achievement
	▪ Baseline for food waste disposal is established	▪ Figure 19 -- Food Waste Diverted from Landfill ▪ Zero Food Waste Committee formed
	▪ Baseline for paper use and recycled content is established	▪ Figure 20 – Annual Office Paper Usage ▪ Figure 21 – Daily Office Paper Usage per Offender
	▪ Baseline for recycling paper, cans, bottles, and other materials is established	▪ Figure 22 – Annual Total Materials Recycled ▪ Figure 23 – Daily Materials Recycled per Offender

4.0 BASELINE DATA

Baseline data collected for fiscal 2004 are shown graphically on the next several pages. A brief discussion of success factors, barriers, and challenges in collecting these data is provided in the sections below.

The data presented address the 15 prisons in the DOC system. Regional offices, headquarters, and community corrections offices are not included. These offices are also beginning to implement sustainability initiatives in the areas of paper purchase and use, recycling, energy usage, and vehicle mileage. However, mechanisms for data collection were not established at these locations during this first reporting period.

4.1 Energy Usage

The Department has been collecting energy usage data since the issuance of Governor's Directive No. 01-01 regarding energy conservation, which was signed by Governor Locke on January 8, 2001. Thus we have now four years of energy usage information by facility. Since the original baseline year of 2000, the Department has reduced its overall facility energy usage by almost 15.7 million kilowatt-hours per year, for an annual savings of nearly $1,000,000 statewide (Figure 2). During this same period, the number of offenders housed in DOC prisons has risen about 14%. The net reduction in average energy usage per offender from calendar year 2000 to calendar year 2003 is 9.8% (Figure 3). In calendar year 2003, systemwide energy usage was 344 million kilowatt-hours. Figure 4 shows annual energy usage by facility for calendar years 2000 through 2003. The 2003 annual average energy usage per offender was 1,600 kilowatt-hours (Figure 5).

Facility energy usage data presented includes combined values for electrical power, natural gas, and propane usage by institution. Consumption is expressed in units of kilowatt-hours. In fiscal 2004, none of the facilities' energy was provided by renewable sources. We are not reporting the amount of carbon dioxide produced. Due to the huge variety of equipment producing carbon dioxide emissions, we found the complexity of this calculation to outweigh the value of the answer, at least for this reporting period.

Each DOC facility also operates and maintains a fleet of vehicles and one or more emergency backup generators. Some institutions operate diesel-fired boilers. McNeil Island Corrections Center (MICC) uses a substantial amount of diesel in the operation of its ferries and barges for transporting people, equipment, vehicles, construction materials, and supplies to the island. The energy consumed by this equipment is expressed in number of gallons of diesel and gasoline. These data include bulk fuel purchases and estimated quantities of gasoline purchased offsite and paid for by agency credit card. Gasoline or diesel used in personal vehicles is not included. These offsite purchases were calculated using the credit card totals and an average price of $1.85 per gallon of gas. Overall, in fiscal 2004, DOC used 352,553 gallons of gasoline and 1,142,067 gallons of diesel (Figure 6). On a per offender basis, this fuel usage averaged 0.26 gallons of fuel (gasoline and diesel combined) per day (Figure 7). Diesel usage at McNeil Island accounted for 79% of total diesel used.

The Secretary of Corrections signed a policy in May 2004 that requires the purchase of hybrid vehicles for normal passenger use, in lieu of automobiles with lower mileage performance, unless there is a specific use for which a hybrid is not suited. Hybrids were piloted as perimeter patrol vehicles at Stafford Creek Corrections Center, and were found to have superior performance to other vehicles used there. The Department had purchased 39 hybrids by June 30, 2004.

Figure 2. Historic Total Annual Energy Usage
Calendar 2000 - 2003

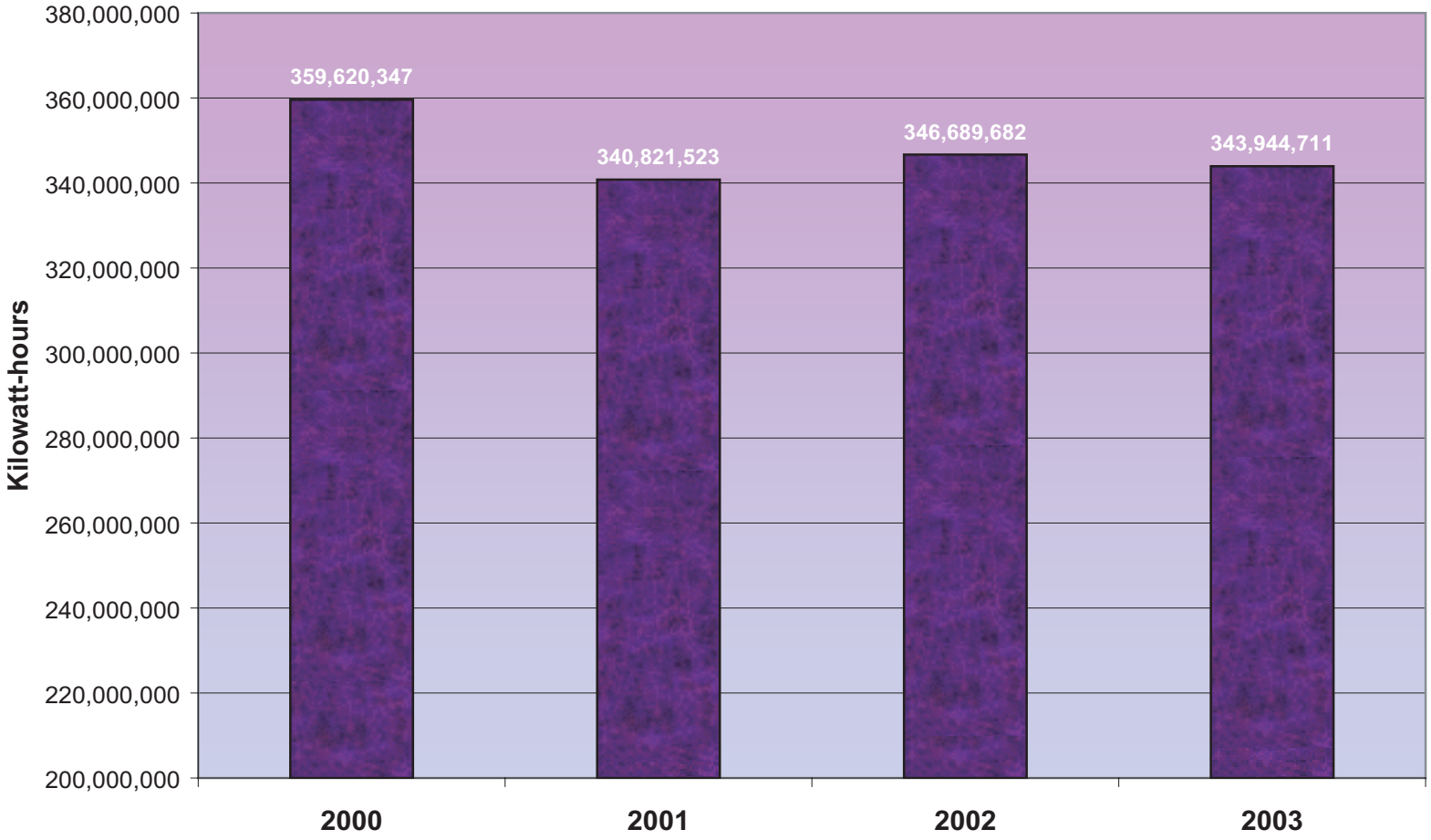


Figure 3. Historic Average Monthly Power Usage per Offender
Calendar 2000 - 2003

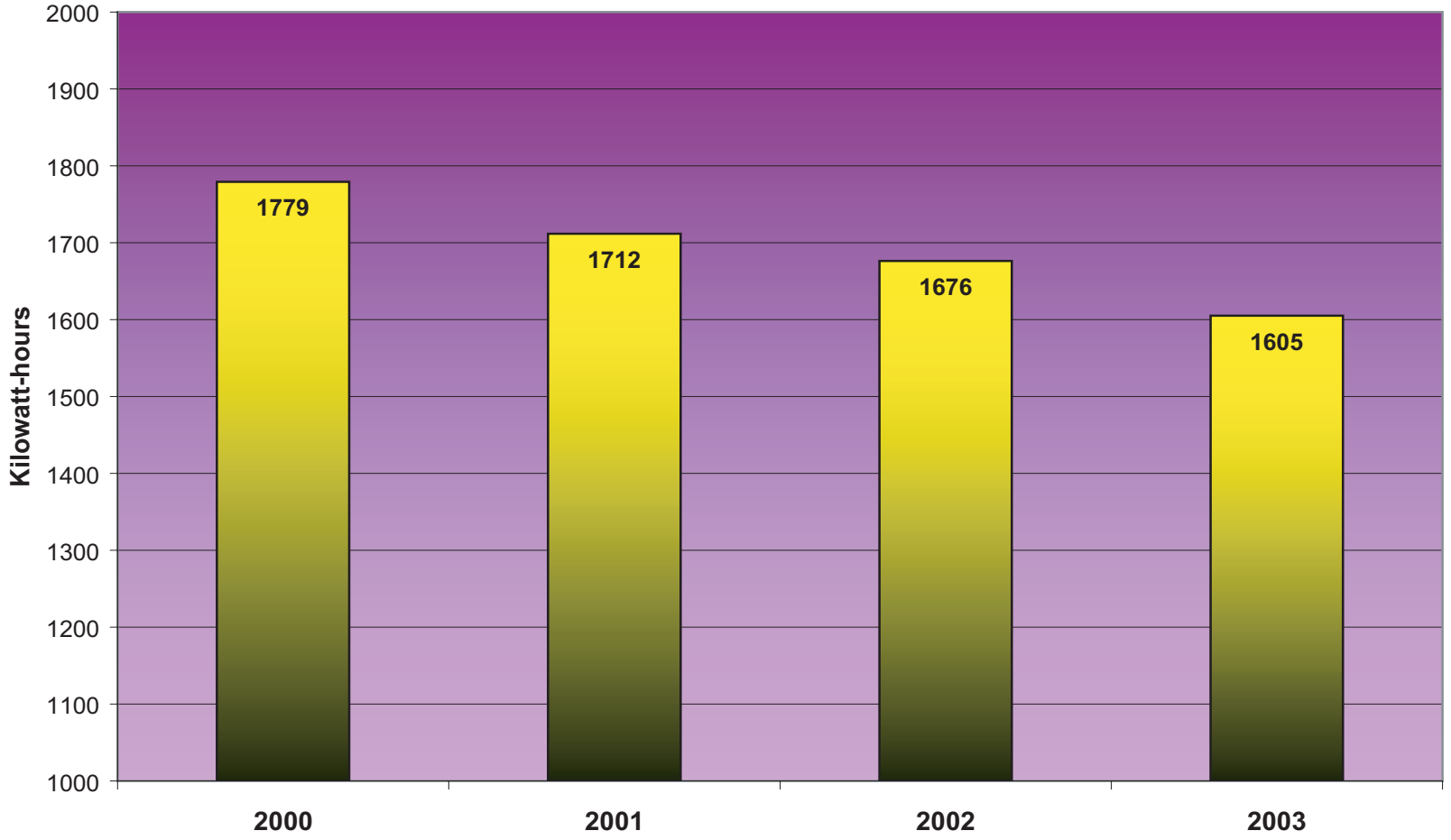


Figure 4. Historic Annual Energy Usage by Facility
Calendar 2000 - 2003

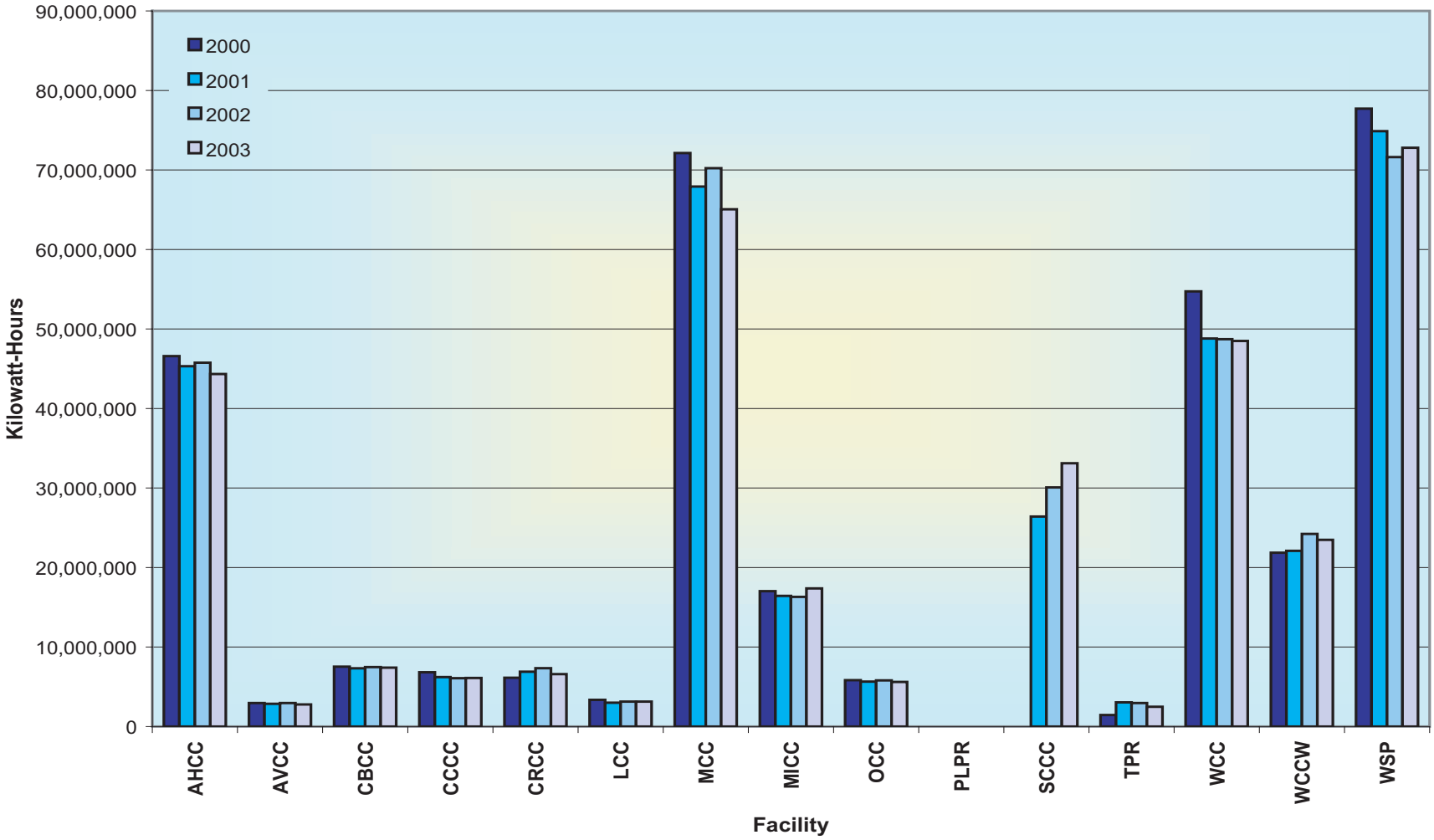


Figure 5. Historic Annual Facility Energy Usage per Offender Calendar 2000 - 2003

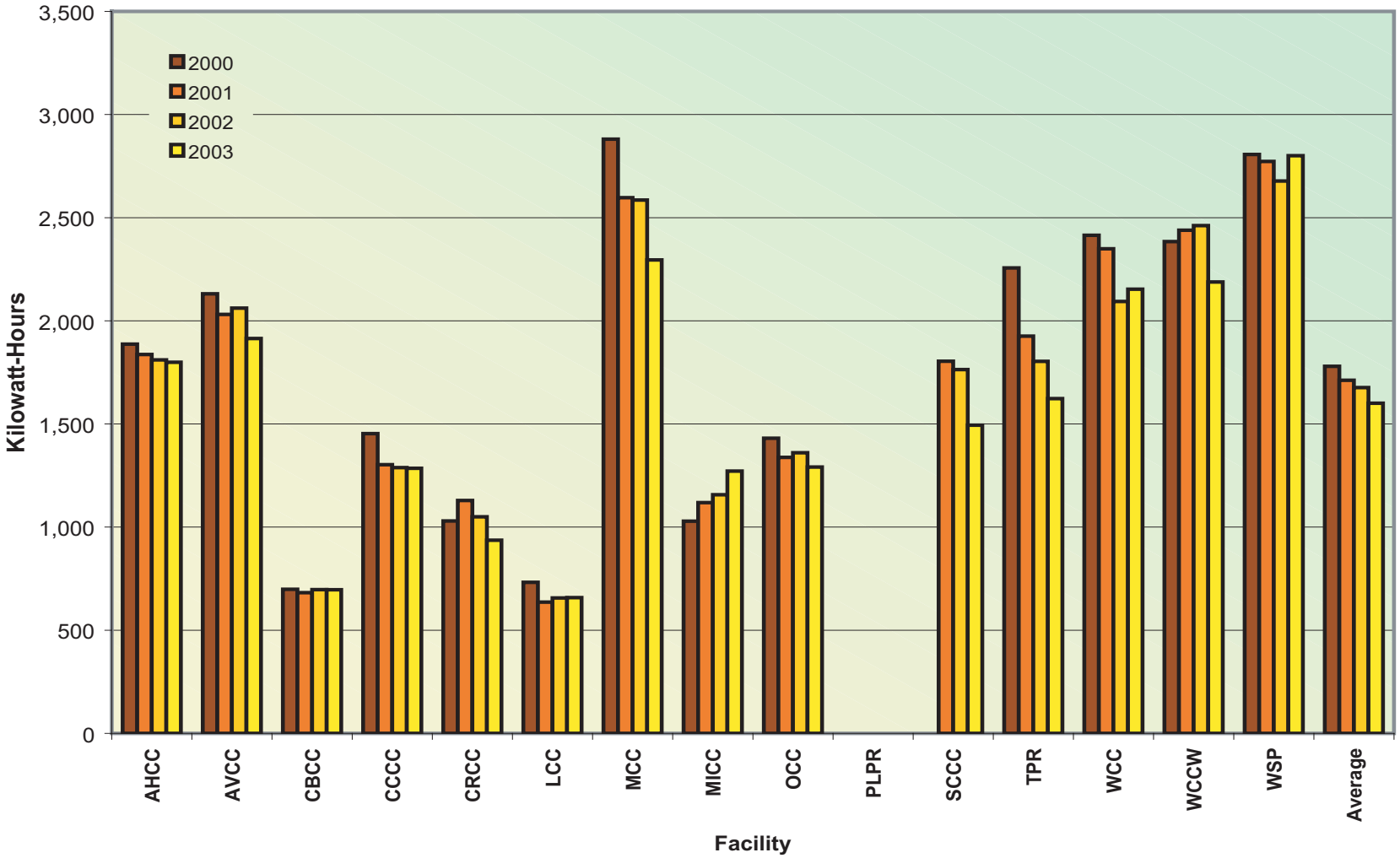


Figure 6. Historic Annual Diesel and Gasoline Usage
Fiscal 2004

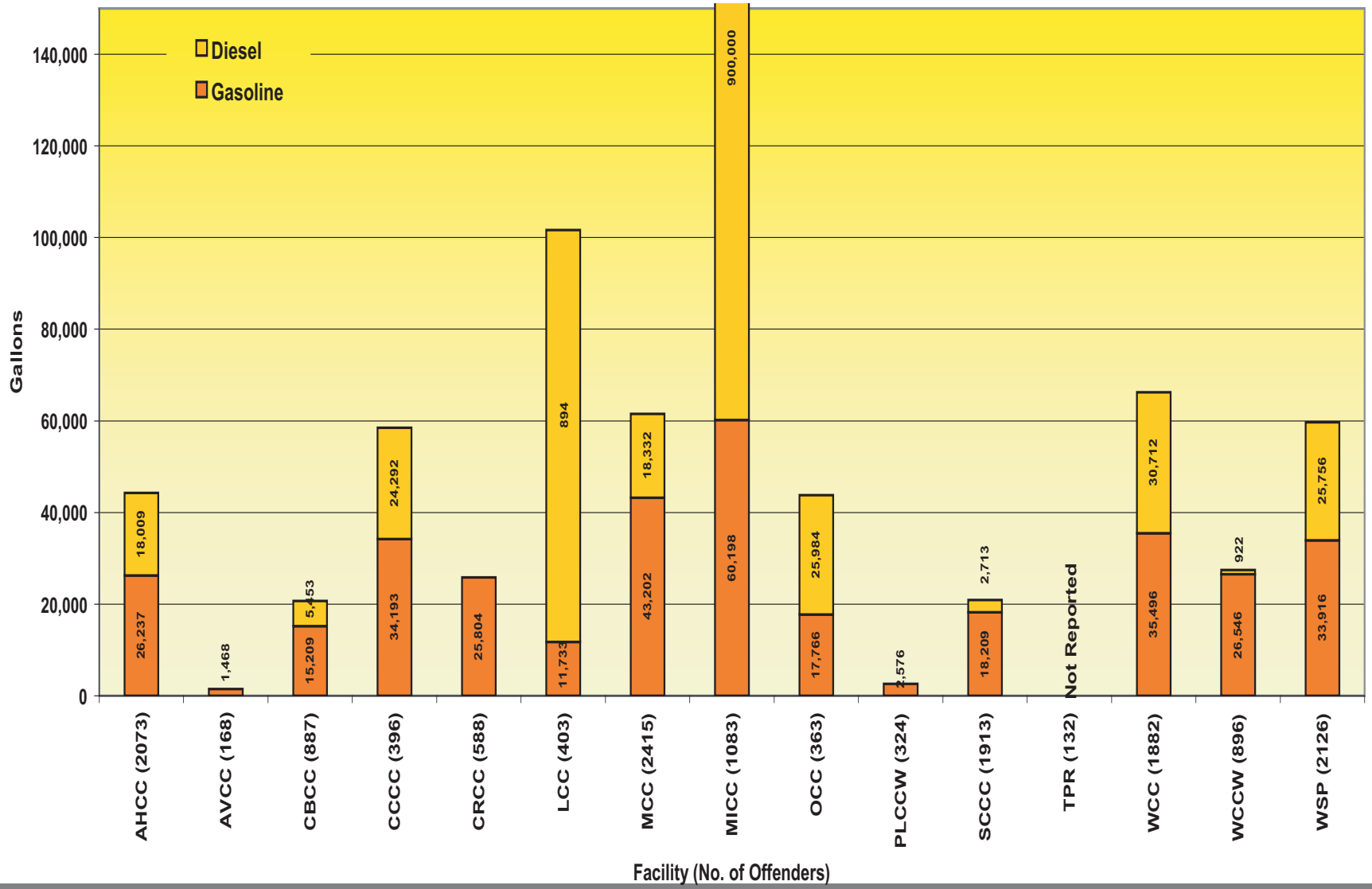
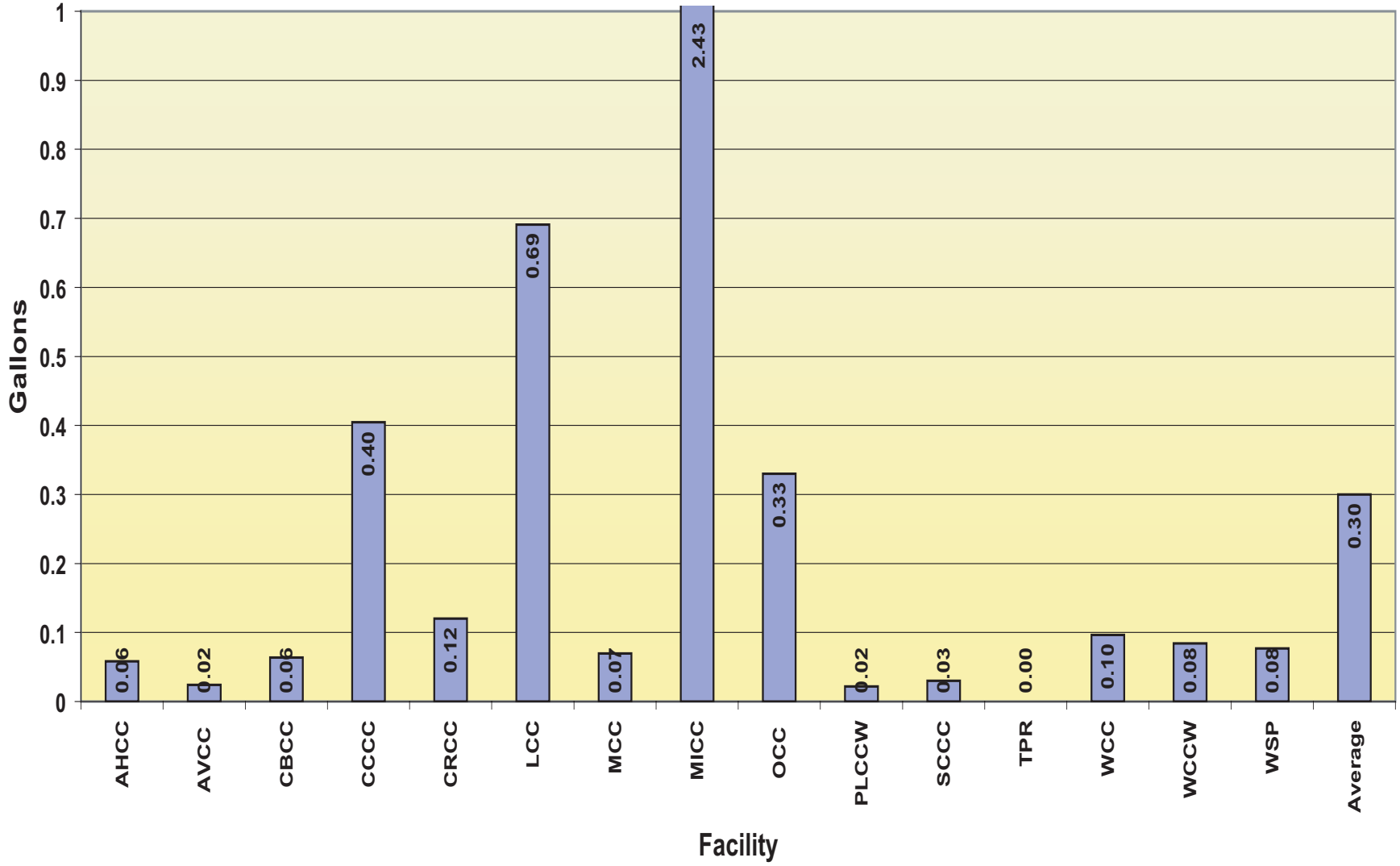


Figure 7. Daily Diesel and Gasoline Usage per Offender
Fiscal 2004



4.2 Water Usage

Figure 8. CCCC Roof Runoff Capture Tanks

Water usage data were obtained in most cases from utility billing records. In locations where the facility owns and operates its own water system, onsite meter records were used. At the Washington State Penitentiary (WSP), onsite well water usage is not included in the data reported here. WSP well water is used primarily for crop irrigation and lawn watering.

In fiscal 2004, all water reported was potable. Rainwater harvesting projects were initiated at Cedar Creek Corrections Center (CCCC), but there was no rainwater collected within the reporting period (Figure 8). At Washington Corrections Center (WCC), piping was installed to enable the use of treated wastewater treatment plant effluent for washing equipment and structures at the treatment plant. Usage quantity was not reported during fiscal 2004. For this reporting period, water reuse and water reclamation are zero

Aggressive water conservation measures were implemented at several facilities. At Washington Corrections Center for Women (WCCW), lawn watering and onsite vehicle washing were curtailed, sack lunches were served instead of hot lunches to save on dishwashing, and 40 personal washers were replaced with high efficiency, low-water models. WCC also curtailed its grounds irrigation except for the recreation yards and vegetable garden, repaired leaking valves, and instituted closed loop chiller water reuse, resulting in a substantial decrease in average daily water use.

Total potable water usage systemwide in fiscal 2004 was about 895 million gallons. Annual facility usage ranged from 4.7 million gallons at Tacoma Pre-Release (TPR) to 150 million gallons at McNeil Island (Figure 9). Average daily potable water use per offender ranged from 95 to 283 gallons per day, and averaged 148 gallons per day (Figure 10). Though expressed as “per offender” values, these usage quantities include resource use by facility staff.

Though not specified in the Sustainability Plan, we also looked at wastewater generation. Figure 11 shows wastewater volumes by facility for fiscal 2004. These data were not available for Tacoma Pre-Release or Coyote Ridge Corrections Center. Daily wastewater production per offender is depicted in Figure 12. On average, wastewater volume was 127 gallons per day. Inordinately high volumes such as those shown at McNeil Island, Monroe, and Olympic Corrections Centers likely indicate the presence of inflow and infiltration.

Figure 9. Annual Potable Water Usage
Fiscal 2004

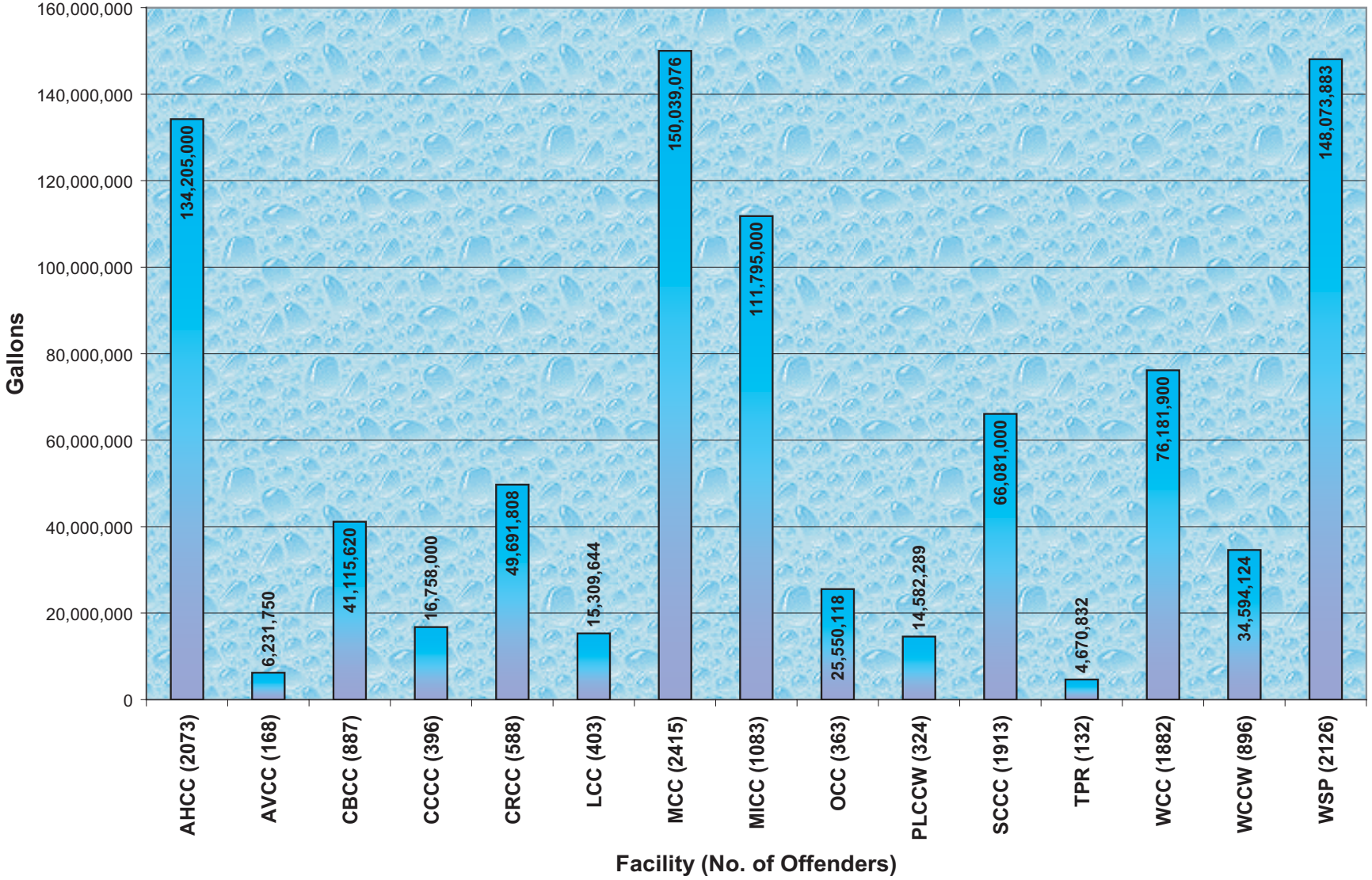


Figure 10. Daily Potable Water Usage per Offender
Fiscal 2004

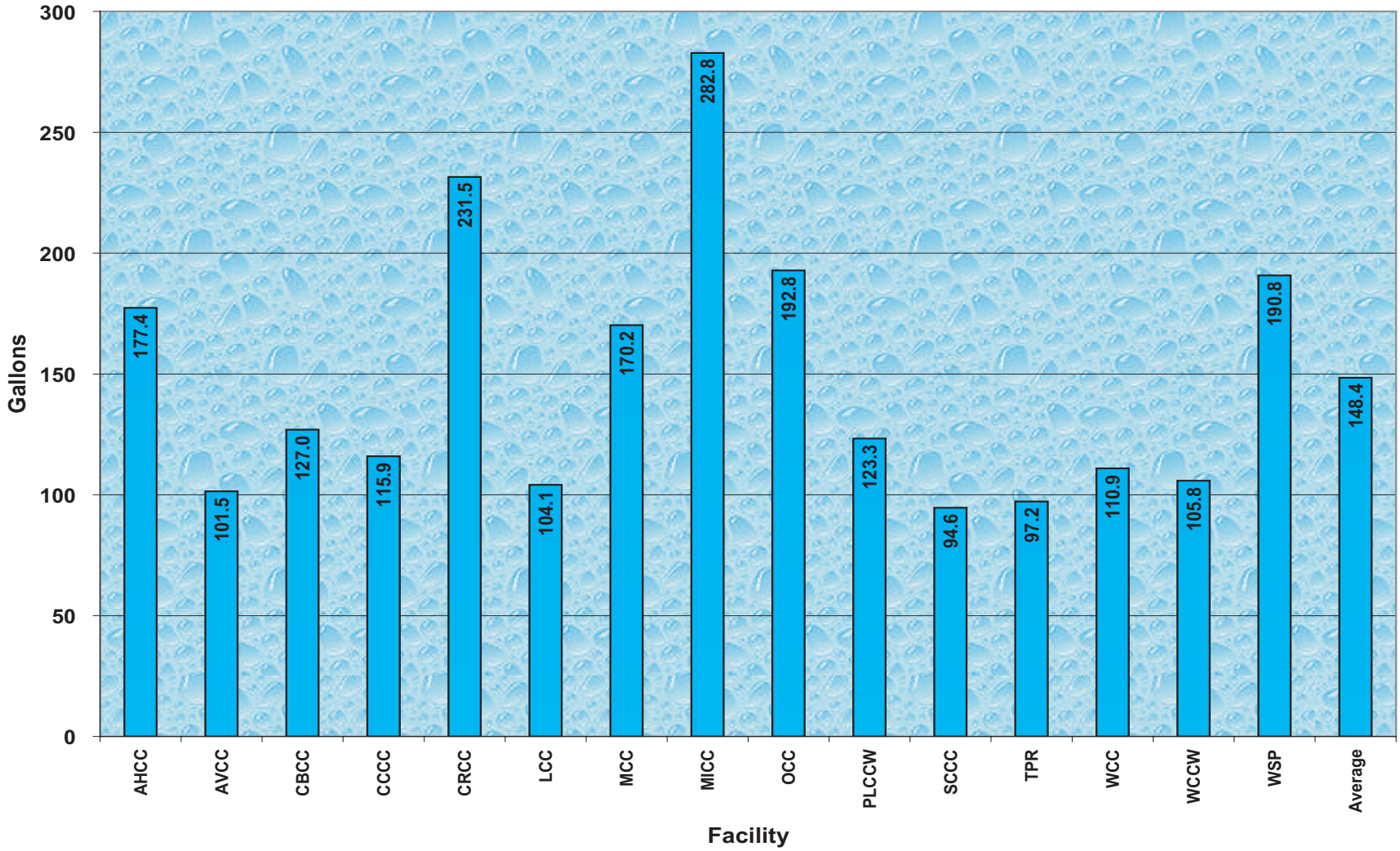


Figure 11. Annual Wastewater Discharge
Fiscal 2004

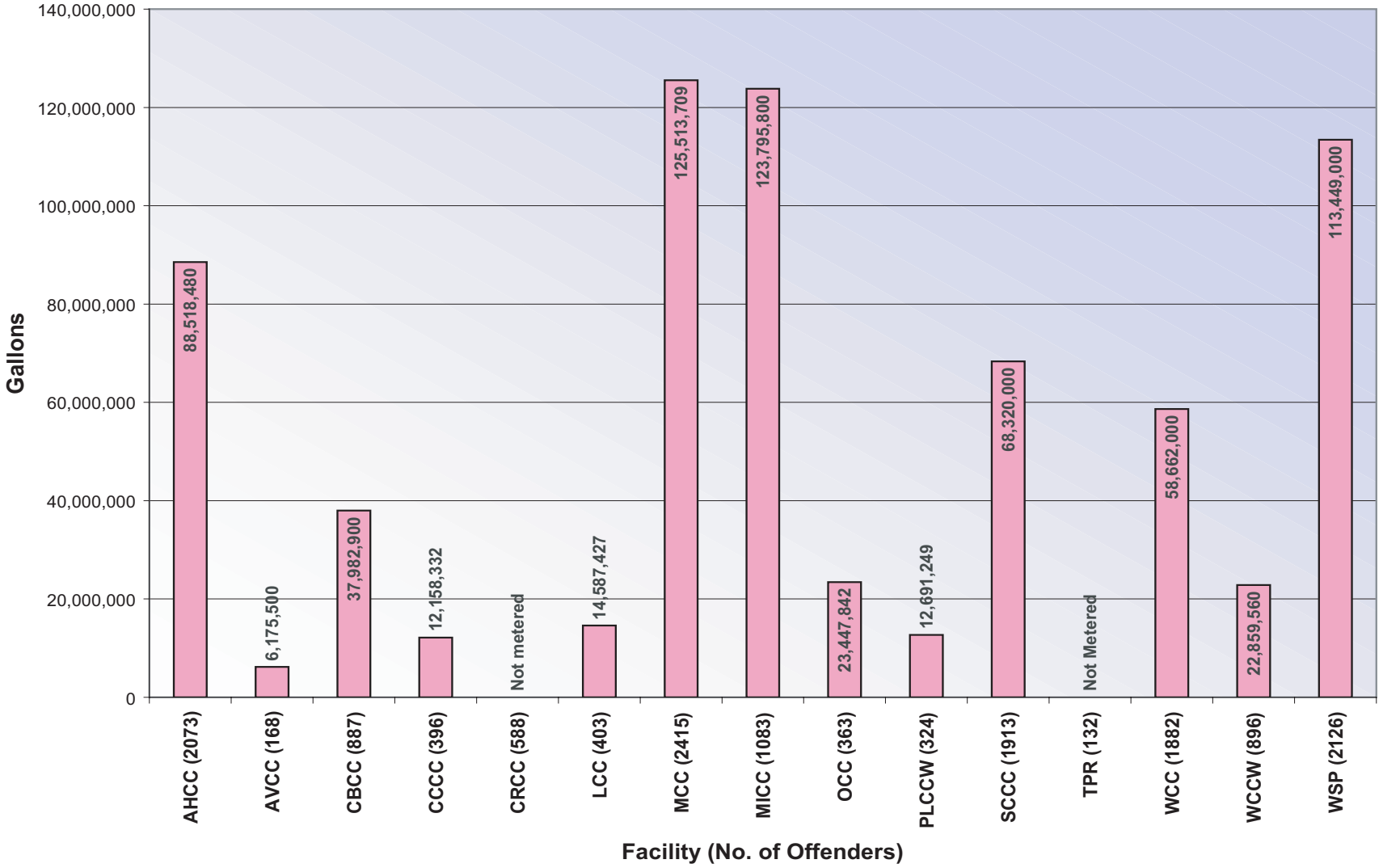
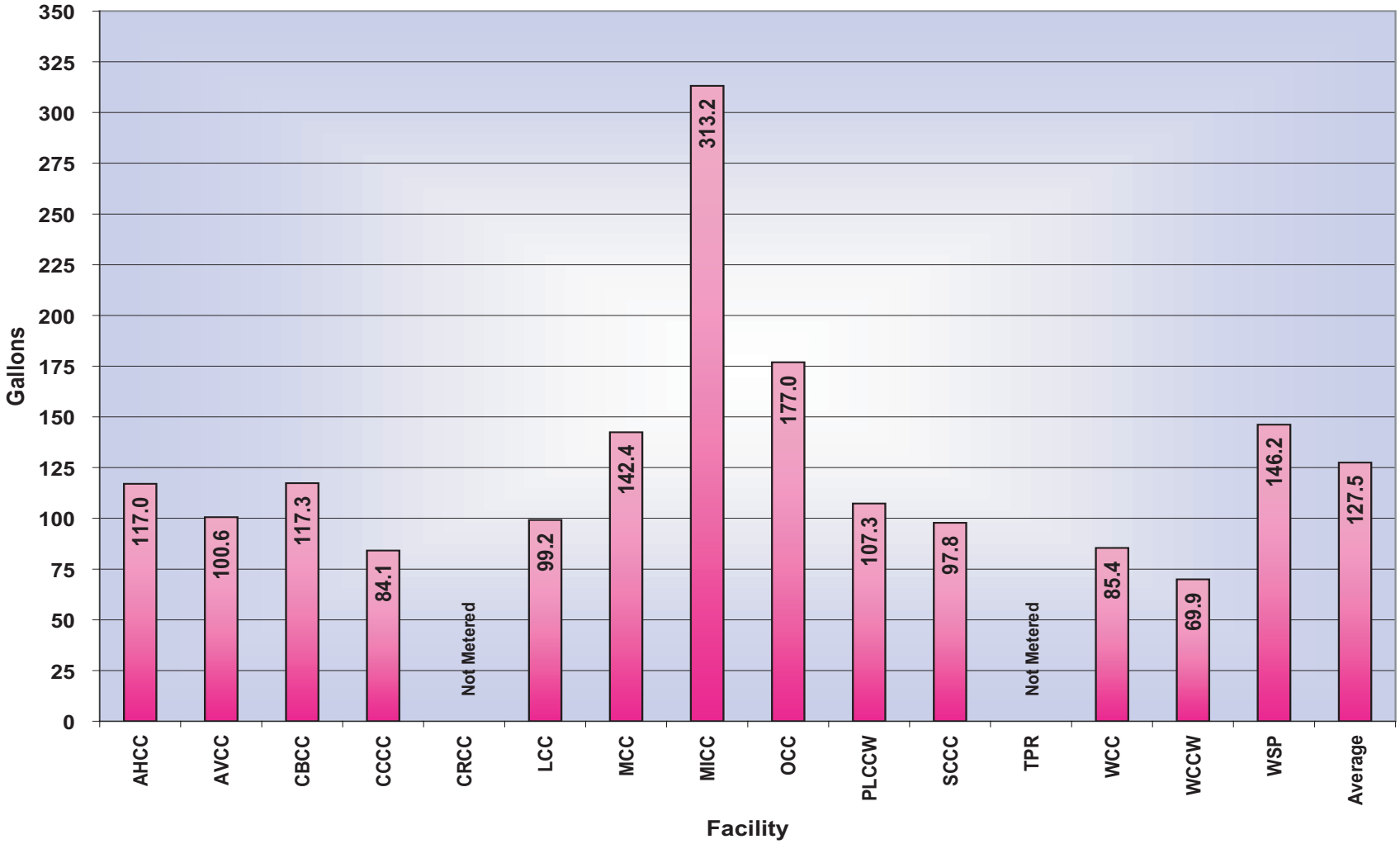


Figure 12. Daily Wastewater Discharge per Offender
Fiscal 2004



4.3 Toxics Reduction

Data regarding toxic materials use was the most difficult to obtain. One or two facilities reported herbicide and pesticide use, but no facilities were able to report on the quantity of products containing persistent bioaccumulative toxins (PBTs). Indoor air quality sampling was found to be too expensive, unless triggered by a health complaint. Therefore, no baseline has been produced for this parameter.

A few DOC institutions have drastically reduced the quantity and number of toxic products used or stored onsite, including Larch, Monroe, and Clallam Bay. Effort has been initiated to provide a standard list of "approved" materials for use statewide in DOC facilities, however this project is still in the early stages. The Department is working with the Department of General Administration and a number of vendors to define a standard for environmentally friendly products.

Figure 13. Organic Garden at Cedar Creek

The Department formed a Zero Food Waste Committee in June 2004. The objectives of this group are to determine strategies for achieving zero food waste and initiate their implementation. The group is looking at the full cycle of food production, processing, packaging, procurement, transportation, preparation, serving, cleanup, and disposal. The Department maintains vegetable gardens at several of its facilities. At Cedar Creek, the vegetable garden produced over 1,800 pounds of vegetables in the 2004 growing season, without the use of chemical fertilizers, pesticides, or herbicides (Figure 13).

Moving forward in the area of toxic materials reduction may need to occur without the benefit of establishing good baseline information. The time required to inventory all of the facilities' products, pour through material safety data sheets, identify persistent bioaccumulative toxins (PBTs) and other unwanted chemicals, and calculate quantities far exceeds the capacity of current staffing levels. We can achieve desired reductions without detailed documentation of current status.

4.4 Sustainable Buildings

Capital Planning and Development established an internal policy to design and construct all new occupied buildings over 5,000 square feet to LEED™ Silver standards. In addition, all major building renovations where the maximum available construction cost (MACC) exceeds 50% of the building value will also meet LEED™ Silver requirements. A brief explanation of LEED ™- Leadership in Energy and Environmental Design - is provided in the appendix.

Table 4. Status of DOC LEED™ Projects, June 30, 2004

Project	Location	Size (sq ft)	Status
Intensive Management Unit – Segregation Unit	Monroe Correctional Complex	38,746	Design complete. Construction contract awarded. Site work in progress.
Regional Training Center	Monroe Correctional Complex	10,000	Construction over 50% complete.
Warehouse	Washington State Penitentiary	86,841	Construction approximately 25% complete.
Correctional Industries/ Dept of Natural Resources Warehouse / Office building	Thurston County	54,100	Design approximately 50% complete.
North Close Custody Complex	Washington State Penitentiary	267,000	Predesign and EIS complete.

4.5 Waste Reduction

Data on various waste streams were collected from each of the facilities, including solid waste, hazardous waste, food waste, and wastewater. In addition, we collected information on paper usage and recycled materials.

4.5.1 Solid Waste. The Department disposed of 8,610 tons of solid waste in fiscal 2004. Solid waste tonnage ranged from 24 tons at Tacoma Pre-Release to 1,408 tons at the Penitentiary (Figure 14). On a per offender basis, solid waste disposal ranged from 1 pound per day at Tacoma Pre-Release to 5.7 pounds per day at Pine Lodge Corrections Center for Women (Figure 15). On average, solid waste disposal was 1,095 pounds per year or 3 pounds per day, per offender.

4.5.2 Hazardous Waste. Most DOC facilities are conditionally exempt small quantity generators of hazardous waste, generating less than 220 pounds per month. In calendar 2003, three prisons were above this threshold—the Penitentiary, Monroe, and McNeil Island (Figure 16). A large amount of "legacy" waste was cleaned out of the Penitentiary and shipped offsite for disposal or recycling in 2003. The data in Figure 16 represent hazardous waste shipments made in fiscal 2004.

4.5.3 Food Waste. At many DOC facilities, wet food waste comprises from 30 to 50% of the facility's solid waste stream (by weight). In 2001, staff and offenders at Olympic Corrections Center (OCC) built an aerated static pile compost system to process OCC's wastewater treatment plant biosolids and food waste (Figure 17). In addition, Clallam Bay hauls most of its food waste to OCC for composting. The amount of material processed and the quantity of soil amendment produced at OCC is summarized in Table 5. Over three years of operation, an average of $107,122 was saved annually in avoided hauling and tipping fees.

Another compost facility was opened in March 2004 at the Penitentiary (Figure 18). This facility is the result of a partnership between the City of Walla Walla, Correctional Industries, and Walla Walla County. The facility was partially funded through state grants, is located on Penitentiary property, operated by Correctional Industries, employs several WSP offenders, and serves the entire community. Yard waste is received and processed with WSP food scraps, shredded paper, dairy waste, and other materials in two types of composting units—aerated static pile and in-vessel composters. Beneficial soil amendment is then sold to the Department of Transportation and other government agencies for roadside stabilization, roadside plantings, and park maintenance.

Table 5. Summary of Olympic Corrections Center Compost Operations

Parameter	Calendar Year		
	2001	2002	2003
Food Waste In (tons)	375	340	320
Shredded Paper (tons)	17	15	14
Biosolids In (tons)	330	300	280
Soil Amendments Produced (cubic yards)	500	450	400
Avoided Landfill Costs	$116,370	$105,672	$99,325

Figure 14. Annual Solid Waste Disposal
Fiscal 2004

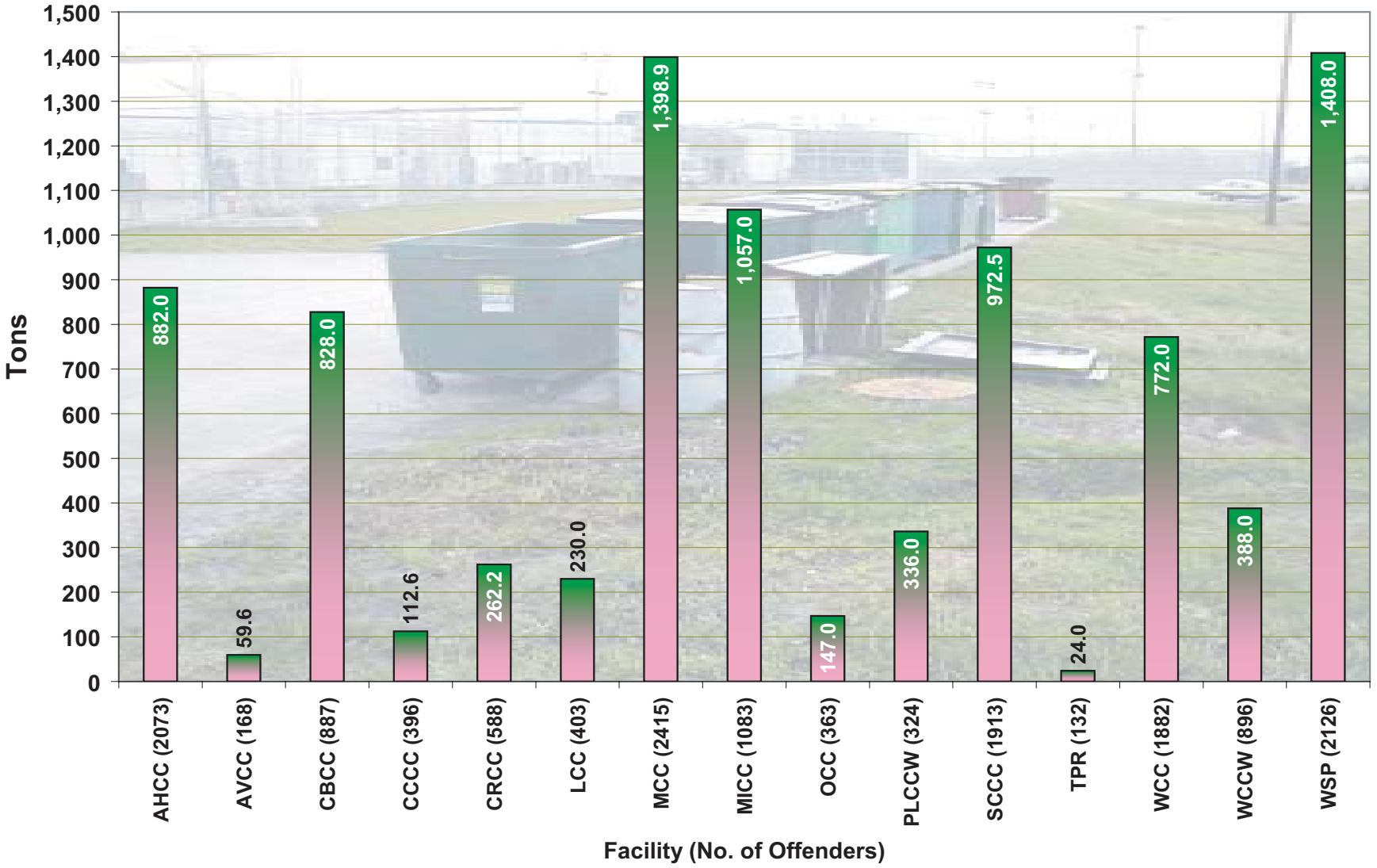


Figure 15. Daily Solid Waste Disposal per Offender
Fiscal 2004

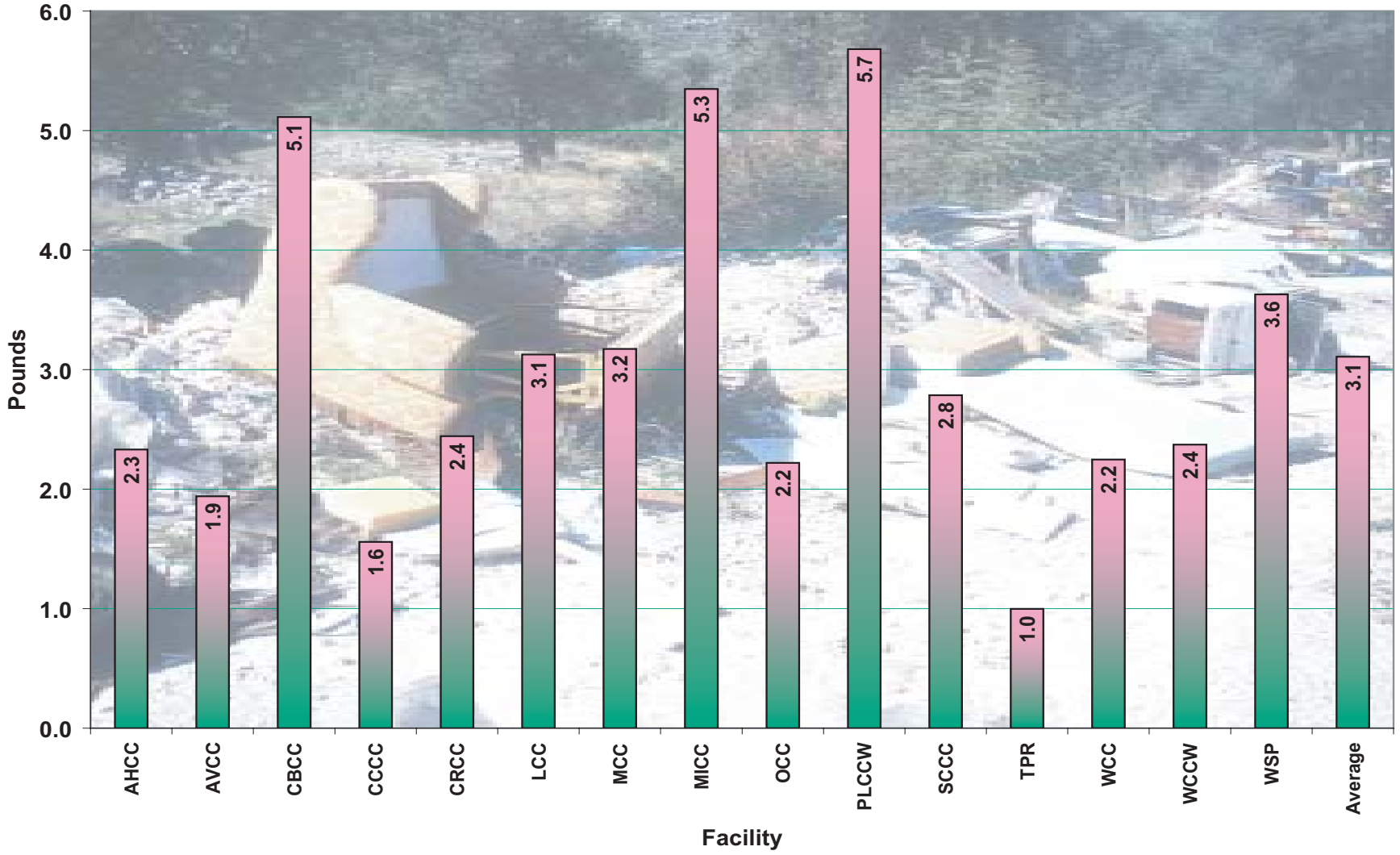


Figure 16. Hazardous Waste Generated
Fiscal 2004

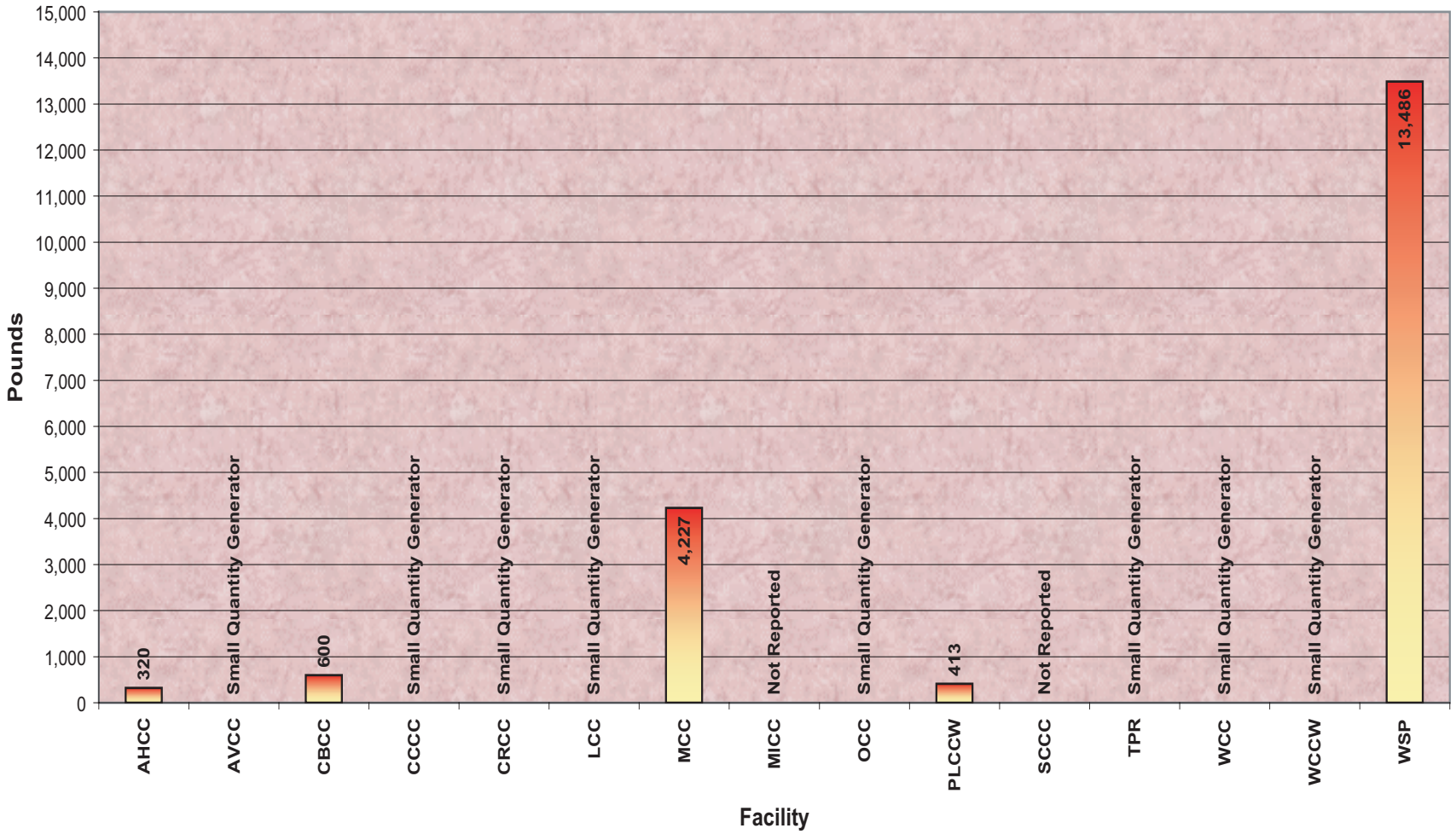


Figure 17. Composting Operation at Olympic Corrections Center

The amount of food waste diverted from landfills in fiscal 2004 via composting is summarized in Figure 19. The grand total was 415 tons.

4.5.4 Paper Usage. According to data provided by the Office of State Procurement, DOC is the second largest consumer of paper among the state cabinet agencies. Figure 20 summarizes DOC facilties' paper use by paper type in fiscal 2004. Total paper purchased was 85,236 reams, an average of approximately12 reams (6,000 sheets) per employee, or about 7 sheets per day per offender (Figure 21). Seventy-one percent of total paper purchased was 30% recycled content. No 100% recycled paper was purchased by the facilities in this reporting period.

4.5.5 Recycling. Twelve of the institutions have some sort of recycling program (Figure 22). A total of 1,762 tons of materials were recycled systemwide in fiscal 2004. Recycling ranged from 0.12 to 1.6 pounds per day on a per offender basis, averaging 0.6 pounds per day (Figure 23). Materials counted in this combined total include cardboard, paper, metal, and glass. Not all facilities maintained accurate records of quantities of materials recycled.

4.5.6 Success Factors. The elements that facilitated collection of these baseline data include the following:

- Experience in collecting the data previously.
- Knowing exactly what data were expected.
- Having a system in place to generate the data.
- Cooperation among staff.

4.5.7 Barriers and Challenges. Conditions that interfered with collection of baseline data or hampered compilation of the data include the following:

- Lack of experience in collecting specific data.
- Misunderstanding of what information was being requested.
- Not having a system or equipment in place to generate the data. (This is particularly true for vehicle mileage.)
- Dissimilar and incompatible versions of spreadsheet software.
- The sheer volume of data.
- The number of locations from which data is collected.
- Special cases, where situations cause the data to be dissimilar, inaccurate, or misreported.
- Lack of resources specifically assigned to the collection, compilation, analysis, and reporting of data.

Figure 18. Regional Compost Facility at Washington State Penitentiary

5.0 COMMUNICATION AND EDUCATION

5.1 Progress

Training and education around sustainability occurred in a number of ways and at all levels in the Department. We started essentially with a knowledge base of zero when we began development of the Sustainability Plan in the spring of 2003. Over the next few months, the 18 DOC employees who were involved in plan development came to a solid understanding of what sustainability is, why it is important, and a few ways that it could be applied within Corrections.

Figure 19. Food Waste Diverted from Landfill
Fiscal 2004

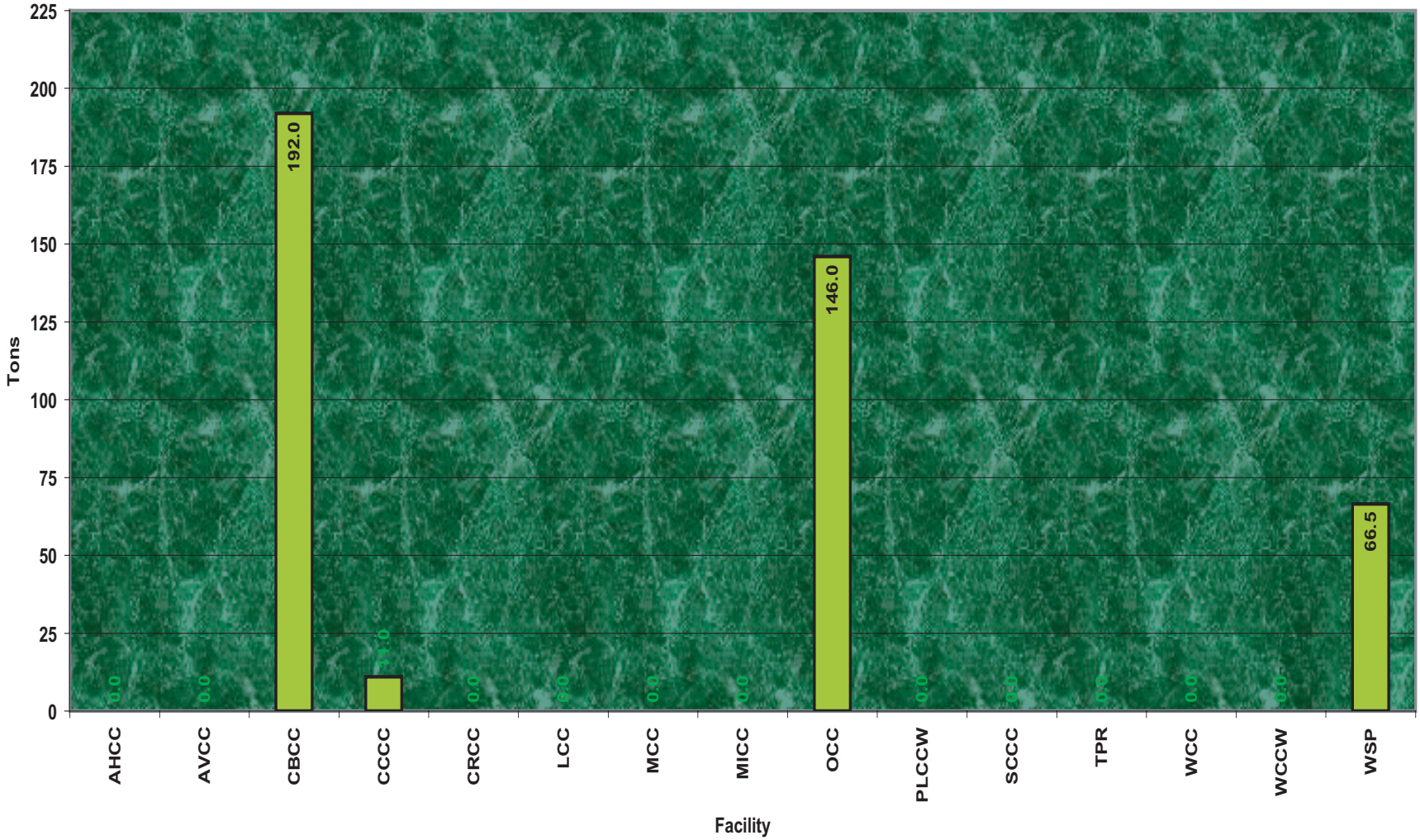


Figure 20. Annual Office Paper Usage
Fiscal 2004

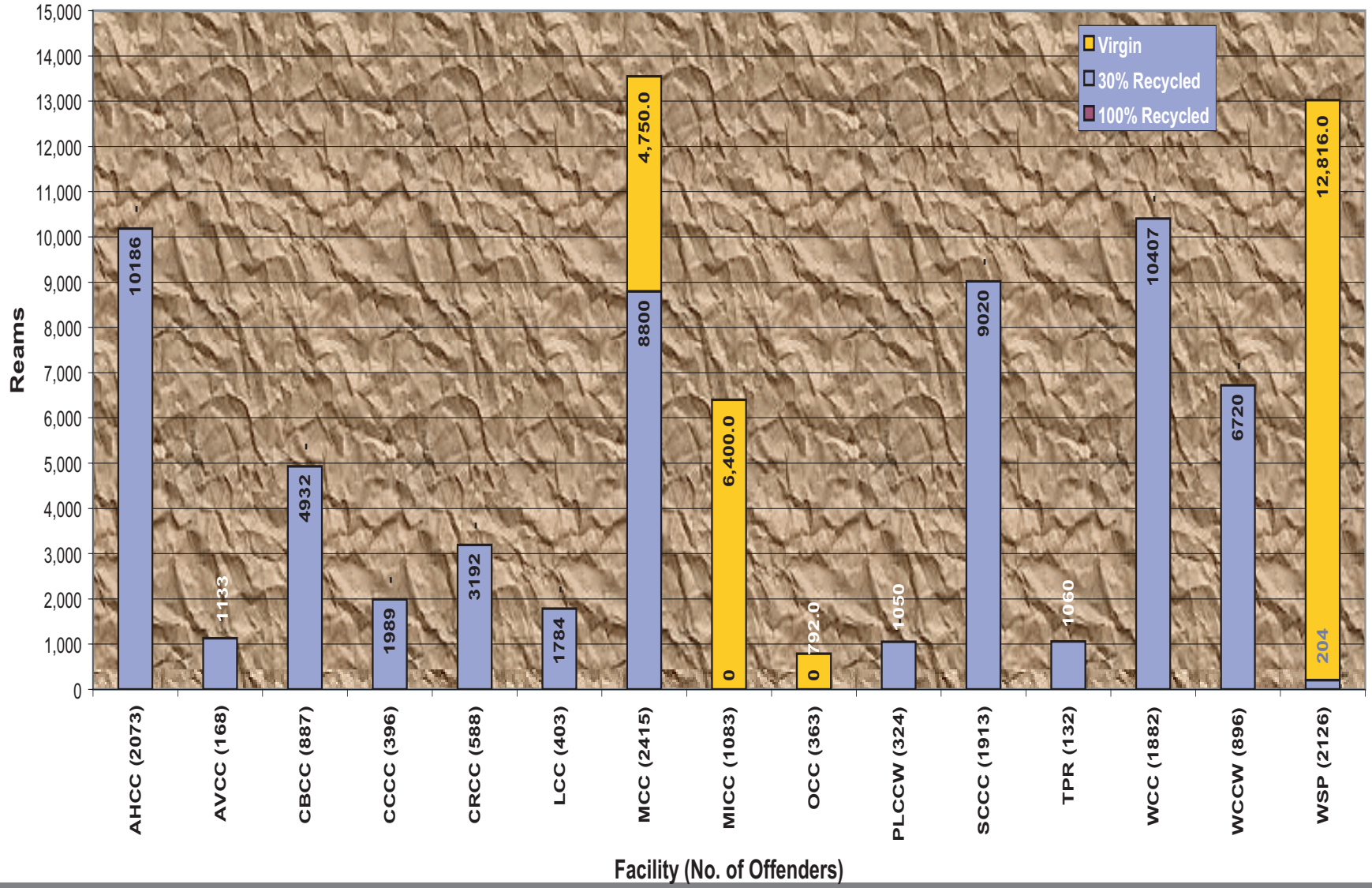


Figure 21. Daily Office Paper Usage per Offender
Fiscal 2004

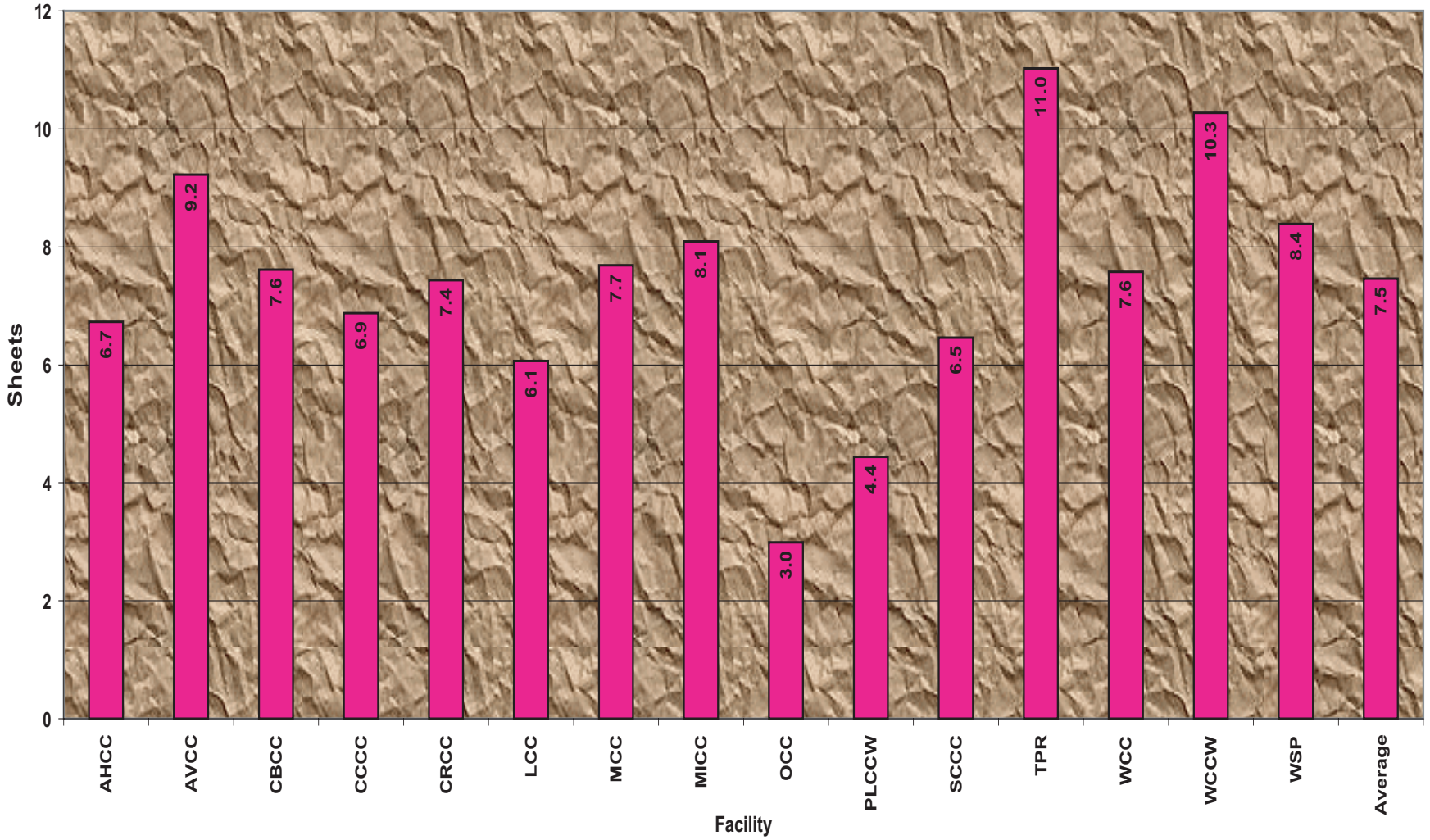


Figure 22. Annual Total Materials Recycled
Fiscal 2004

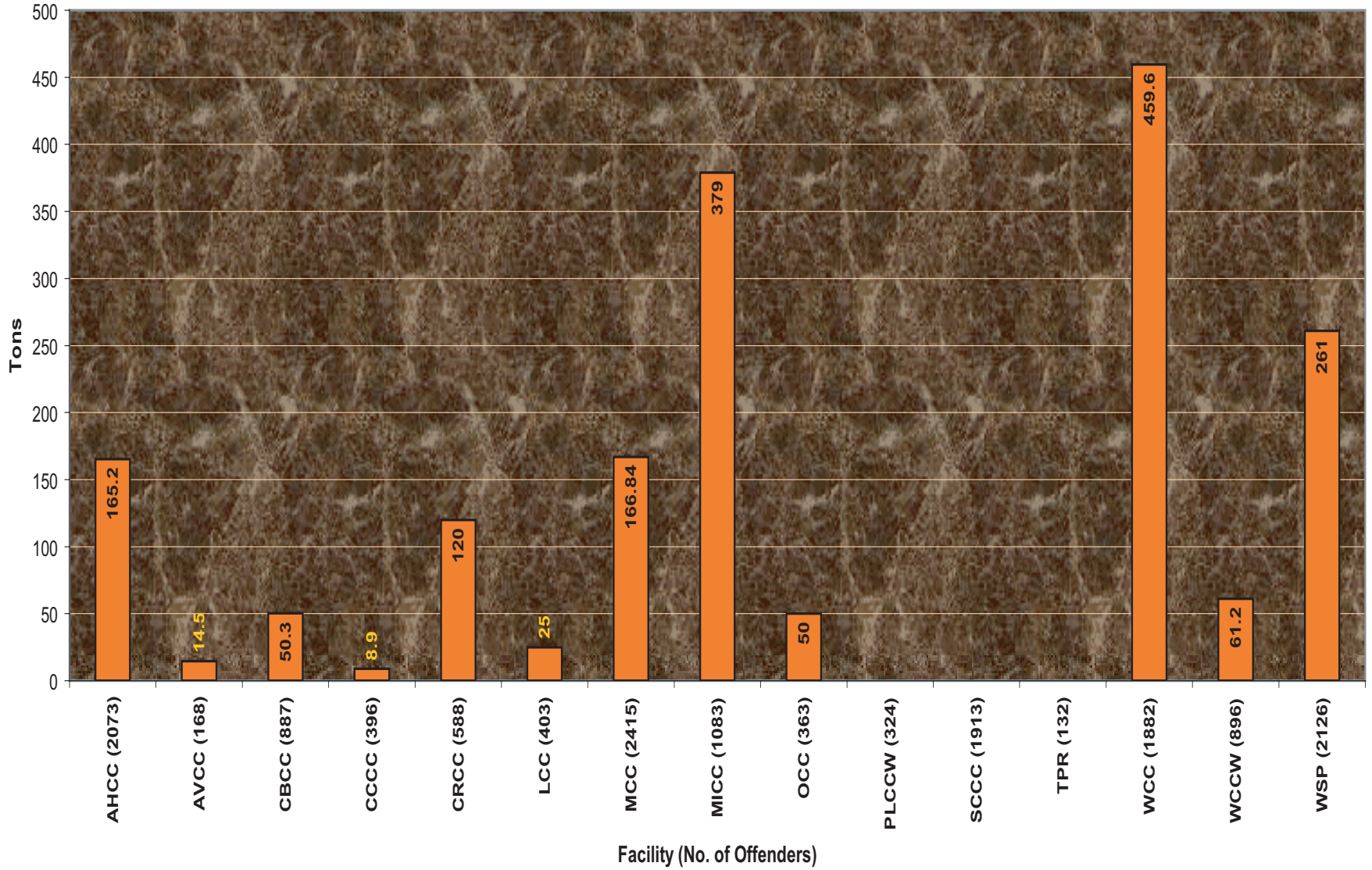
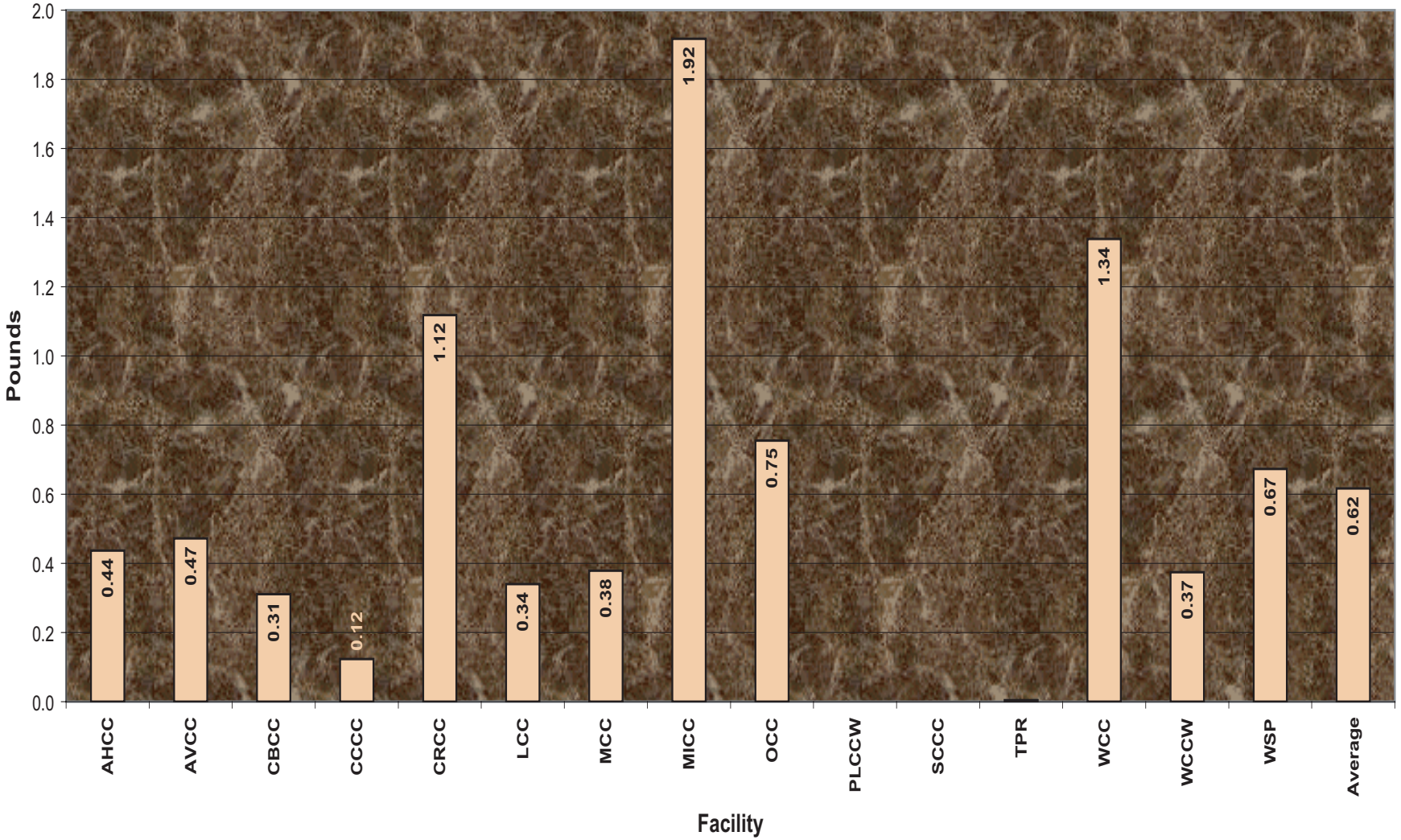


Figure 23. Daily Materials Recycled per Offender
Fiscal 2004



Two or three short training sessions of 30 to 60 minutes each were provided to DOC executive management, Office of Correctional Operations managers, Office of Administrative Services managers, plant managers, project managers, and safety officers. Topics included an introduction to sustainability, the DOC Sustainability Plan, and sustainability implementation.

Local sustainability teams were formed at each institution. About half of the teams have prepared focused sustainability plans specific to their facilities. The Sustainability Coordinator visited the teams and provided information and guidance on a number of sustainability issues.

The Director of Environmental Services completed a six-workshop series on Leading Change Toward Sustainability by Bob Doppelt at the University of Oregon, covering aspects of organizational change, leadership, communication, systems thinking, and motivation necessary to successfully implement sustainability within a large organization.

Twenty-two DOC staff attended a toxics reduction seminar in May 2003, a joint workshop for DSHS and DOC led by a private consultant.

Several DOC staff have attended other workshops offered by Bob Doppelt in Olympia as well as sustainability forums hosted by the Office of Financial Management.
mental in helping us acquire the knowledge tools we need to implement sustainability.

In January 2004, at DOC's request, Department of General Administration Plant Operations Services hosted a one-day training on design and construction of state buildings to LEED™ standards. Approximately 25 DOC staff and many from other state agencies attended this session.

5.2 Success Factors

Generally, our training sessions have been well received. We have used *The Next Industrial Revolution* video, with great success, as an introduction to sustainability with a wide variety of audiences. People are able to readily grasp the value and necessity of sustainability after viewing this film. Strategies for implementation are a little harder to communicate. We have found Bob Doppelt's guidance and perspective on organizational change to be very helpful. DOC management support of continuing education in general has been instrumental in helping us acquire the knowledge tools we need to implement sustainability.

5.3 Barriers and Challenges

Limitations in time and money constrain the amount of training we can take and deliver. Helping management and staff understand that sustainability is not another program like Total Quality Management or Combined Fund Drive is also a challenge. DOC's lack of information technology capacity is a limitation of our ability to use the internet for sharing information on sustainability to DOC employees and others outside the organization. Managers are extremely busy and have limited opportunities to participate in formal training. Lack of staff resources also affects our ability to share information through written or internet formats. DOC is a large agency with 8,000 staff to be trained.

6.0 STATEWIDE PERFORMANCE MEASURES

The Office of Financial Management asked specifically that we report on copy paper use, vehicle miles traveled, fuel purchases, and fleet fuel efficiency. These data for fiscal 2004 are summarized in Table 6.

Table 6. Statewide Performance Measures

Parameter	Fiscal 2004 Performance		Comments
Copy paper use	Virgin paper, reams	24,759	These data represent paper usage at DOC institutions only. They do not include headquarters, regional offices, or community corrections offices paper use.
	30% recycled, reams	60,477	
	100% recycled, reams	0	
Vehicle miles traveled	DOC fleet vehicles	Unknown	We were unable to obtain these data for the reporting period.
	Personal vehicles	Unknown	
Fuel purchases	Gasoline, gallons	352,553	These data represent fuel purchases for DOC institutions only. They do not include headquarters, regional offices, or community corrections offices fuel purchases.
	Diesel, gallons	1,142,067	
	Natural gas, therms	6,054,788	
	Propane, gallons	229,790	
Average fuel efficiency of fleet vehicles	Hybrid sedans	39 @ 55 mpg	These data represent primarily passenger and patrol vehicles at the facilities. Heavy equipment is excluded, as are vehicles assigned to regional offices, community corrections offices, and headquarters.
	Sedans, light trucks, vans	1,199 @ 18.5 mpg	
	Buses	21 @ 10 mpg	
	Approx. fleetwide average	19.5 mpg	

7.0 NEW OR UPDATED GOALS AND OBJECTIVES

The Department prepared an updated Sustainability Plan for 2004, issued separately from this Progress Report. The five "stretch" goals are essentially the same, but the long-term horizon for achievement was reduced from 50 years to 25. Interim milestone achievements were modified accordingly for 5 and 10 years. Minor changes in actions, approaches, and yardsticks were added to the plan.

Appendix: Leadership in Energy and Environmental Design (LEED™)

Green building integrates the siting, orientation, operational systems, and materials to promote environmental stewardship, economic vitality, and social benefit. Green building or sustainable design and construction focuses on energy and water use efficiency, recycled content building materials, minimizing local and global environmental effects caused by buildings, and enhancing indoor environmental quality. Green buildings have been shown to reduce power and water costs, and more importantly, to improve occupant health and performance.

Leadership in Energy and Environmental Design (LEED™) is a system for defining what a green building is and for rating green building design. The U.S. Green Building Council, a national consensus-based organization, has adopted this system with members including government agencies, design firms, product manufacturers, and developers. Currently, LEED™ is recognized nationally and internationally as the pre-eminent green building design standard. The LEED™ system provides a format for facilitating the integrated design process. The U.S. Green Building Council provides training in LEED™, certification of LEED™ professionals, updating of the LEED™ methods, and certification of buildings. The organization also serves as a focal point for information exchange about green building design for professionals in the building design and construction industry.

The LEED™ standard has been named in numerous executive orders, legislation, resolutions, and ordinances for use by state agencies, cities, school districts, and other entities. The city of Seattle has adopted an ordinance that requires all city-owned new building projects to meet the LEED™ Silver standard. In Washington, the Legislature has passed a bill that requires that a LEED™ Silver which is required for all new state agency, state building be evaluated in the energy life cycle cost analysis process, which is required for all new state agency, state college and university, and K-12 construction and major renovation projects over 25,000 square feet.

The LEED™ criteria cover five broad categories of design considerations:

- Sustainable sites
- Water efficiency
- Energy and atmosphere
- Materials and resources
- Indoor environmental quality.

Within each category are numerous design elements that may be applicable to a particular building project. Incorporation of some of these elements in the building design provides credits in the LEED™ scoring system. For example, design elements under Sustainable Sites include erosion and sedimentation control, urban redevelopment, location near public transportation, protection or restoration of open space, reduced footprint and increased open space, and stormwater treatment systems, to name a few. If the building can be designed with a reduced footprint, i.e., using less buildable area, and capturing some open space, this would provide 2 points to the LEED™ score.

LEED™ has four levels of green building certification: Certified, Silver, Gold, and Platinum. The basic level requires 26 to 32 points. Silver ranges from 33 to 38; Gold requires 39 to 51 points. The Platinum level is 52 points and above, out of a possible total of 69 points.

Additional information on LEED™ can be found at www.usgbc.org.

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